Continuity of Care in a Family Practice Residency Program

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Continuity of care, one of the basic characteristics of family medicine, was studied over a 12-month period in a family practice residency program. Continuity was measured in three contact areas; office hours, after hours, and on the inpatient service. The intensity of continuity was defined at three levels, from encounters with the personal physician to those with physicians on other medical teams. Continuity was further assessed in relation to family encounters.

Third year residents averaged 83 percent continuity with their individual patients and 70 percent with their assigned families. Residents from other years were noted to have lower levels of continuity. Similar figures were noted for family practice inpatients.

Continuity of care in private practice occurs in about 80 percent of patient encounters and it seems reasonable and feasible to expect residency training programs to come close to this figure.

Continuity of care has been identified as one of the important characteristics of primary care.[1-3] The discipline of family medicine has played a leading role in defining the concept of continuity and underlining its importance in educational programs.[4] To achieve accreditation, family practice residency programs are expected to provide, among many factors, evidence that strong efforts are made on both inpatient and outpatient services to ensure continuity of care for patients by their personal physicians. This evidence, in general, consists of the assignment of a physician to a specific group of patients or families, the provision of regular office hours for that physician through the three-year training period, and arrangements for following the patients on the family practice inpatient service. Critics of these attempts to provide continuity suggest that it is in fact not achieved, in spite of the organization of other supporting mechanisms such as physician teams and nurses.

This report investigates the nature of continuity of care in the Family Practice Residency Program at the University of North Carolina over a one-year period. During this time, a population of 5,020 active patients was served by 17 residents and four faculty physicians divided into three medical teams.

Methods

Continuity of care was studied in three areas of patient contact; office hours contacts, after-hours

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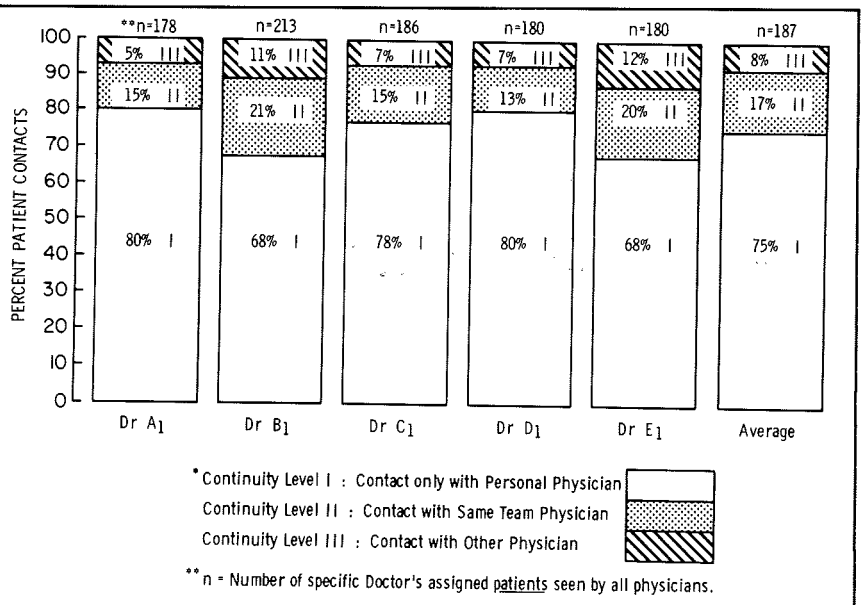

Figure 1. Continuity of care in a university family medicine program. Office hour contacts: levels of continuity* between individual patients and physicians, first year resident physicians

contacts, and inpatient contacts on the family practice inpatient service. Continuity was classified into three levels. The most intense or first level occurred when the patient interacted only with his or her personal physician over the study period. The second level occurred when the patient made contact with another physician on the same medical team, and the third level was noted when the patient interacted with a physician from another team.

In addition to the study of continuity for the individual, office hours contacts were investigated further in order to ascertain the continuity provided for the families assigned to each physician. Levels of continuity were judged using the same categories as described earlier. Over a period of a year, 11,482 visits were made during office hours and 2,213 contacts were made after hours (both face-to-face and by telephone). The average office consultation rate was 2.7 visits per year. Seventy-five percent of the illness episodes only required a single visit and only 12 percent of patients made two visits.

Each patient encounter was documented using an encounter form on which was coded the identification numbers of the patient's personal physician and the contact physician seeing the patient. These, of course, could be one and the same number. The data were punched and stored on computer tape. Inpatient data were obtained by reviewing the medical records and identifying the admitting, discharging, and personal physicians.

Results

Office Hours Contacts—Individual Patient Continuity

Only one half-day was spent per week by first year residents in the Family Practice Center. These physicians therefore saw a relatively small group of patients. Figure 1 shows that, on average, 187 patients were seen by each first year resident over the 12-month period. First level continuity of

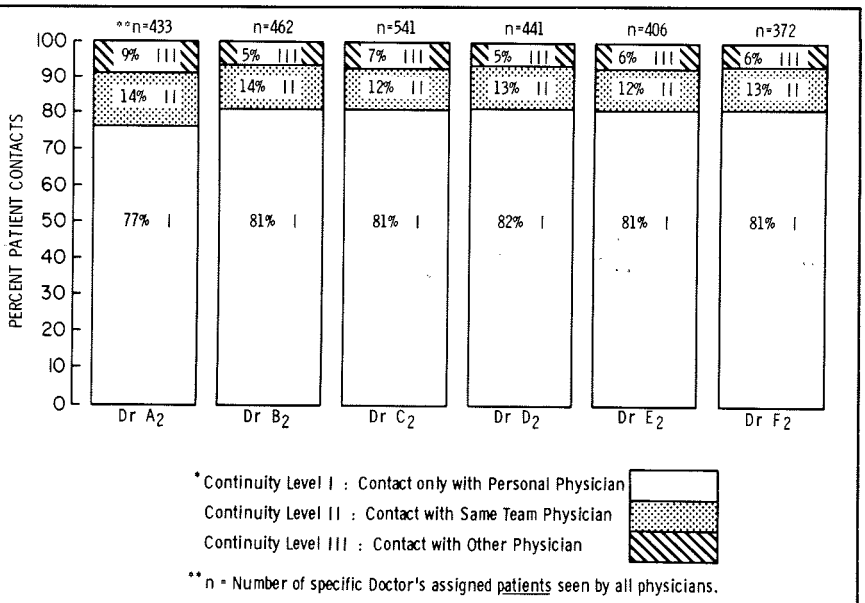

Figure 2. Continuity of care in a university family medicine program. Office hour contacts: levels of continuity* between individual patients and physicians, second year resident physicians

care was provided for between 68 percent and 80 percent of their patients. On the average, 17 percent of the first year residents' patients were seen by another physician from the same team. Continuity given by the second year residents is shown in Figure 2. On average, 80 percent of patients saw only their personal physician over the 12-month study period. Figure 3 demonstrates that first level continuity provided by 6 third year residents, who had an average of 901 patient contacts during the study, averaged 83 percent; the faculty physicians averaged 85 percent.

Family Continuity

When the members of a family were seen only by their personal physician over the 12-month period, continuity was regarded as being at the first level. Second and third levels of continuity were lumped together for ease of analysis. Any family receiving care from a physician who was not their personal physician was regarded as having received second or third level continuity of care. However, in 90 percent of this latter group the family still saw their personal physician for all contacts except for one encounter. Family continuity of care provided by third year residents is shown in Figure 4. These physicians served 60 percent of the total practice population. First level continuity was provided for 66 to 76 percent of all families seeking care over the 12-month period. Similar figures were obtained for faculty physicians (74 percent on average) but were lower for second year residents (70 percent average) and first year residents (53 percent).

After-Hours Contacts

The major portion of care after office hours was provided by third year residents and the remainder by second year residents. As shown in Figure 5, the first level of continuity, in which the patient consulted with his or her own personal physician, was low for third year residents (9 to 19 percent of each physician's contacts) and even lower for second year residents, averaging six percent of con-

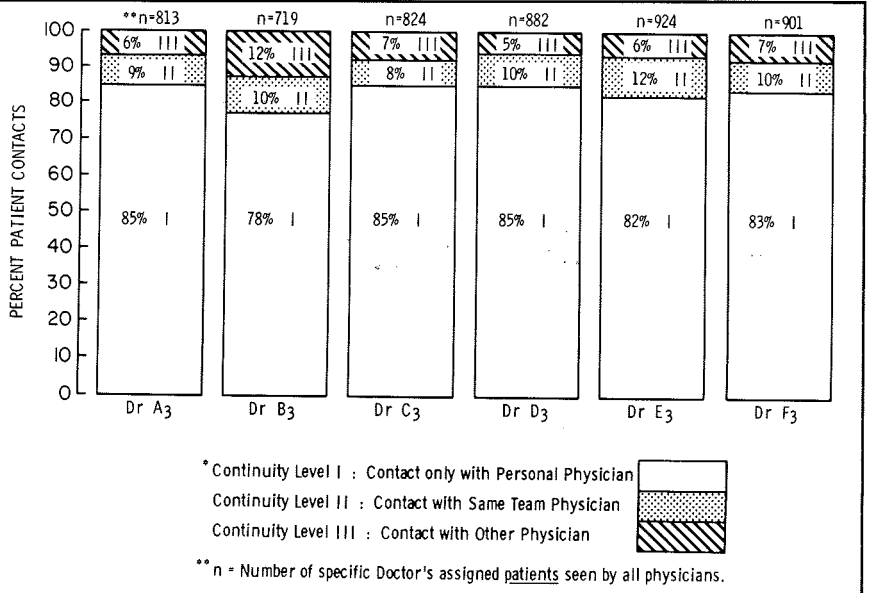

Figure 3. Continuity of care in a university family medicine program. Office hour contacts: levels of continuity* between individual patients and physicians, third year resident physicians

tacts. In general, only a third of the patients made after-hours contact with a physician from their own medical team during the study, so that the lowest level of continuity was provided to patients after hours for approximately two thirds of all the contacts.

Inpatient Services

Over the period of 12 months, 168 patients were admitted to the family practice inpatient service. Continuity of care was presumed to occur if the personal physician was involved in either admitting or discharging his or her patient, or both. Social visits by the personal physician on the wards were difficult to ascertain from the records and no attempt was made to document these. The percentage of patients receiving continuity of care from their physicians on the inpatient service is shown in Table 1. In all, 68 percent of all patients were involved in some continuity of care by their personal physician. This continuity of care was provided for 92 percent of the patients assigned to third year residents, 77 percent of patients assigned to second year residents, and 50 percent of the patients assigned to faculty physicians.

Discussion

Continuity of care has been characterized into five theoretical dimensions by Hennen: chronological, geographic, interdisciplinary, interpersonal, and informational.[5] It is not possible to adequately measure all of these characteristics, but Hansen has detailed variables of continuity that are measurable.[6] The continuity of care in the present study was provided mainly in the chronological dimension over a 12-month period; and in the geographical dimension in the Family Practice Center and on the inpatient service.

The analysis was based on single contacts between patients and their families and physicians. Consequently, continuity over illness episodes was not studied. The investigation of illness episodes might reflect more accurately the implementation of continuity of care but is probably

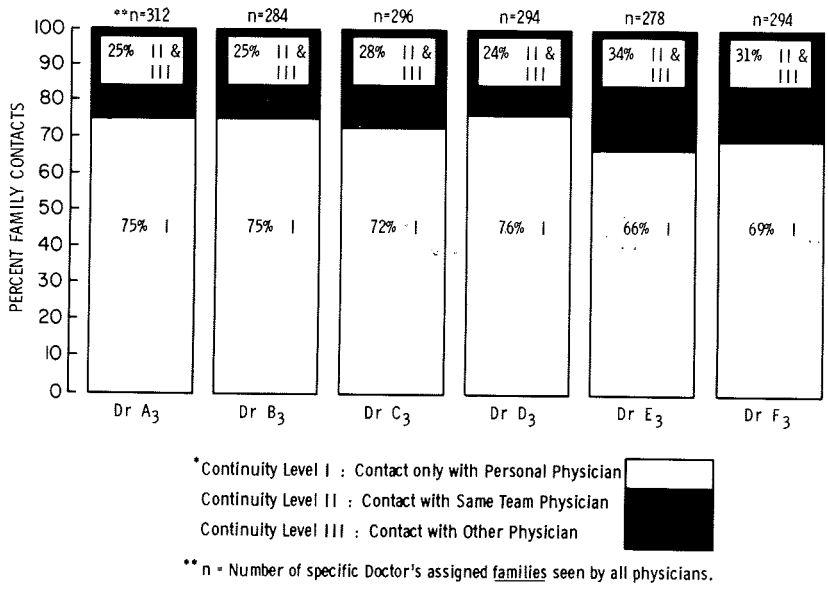

Figure 4. Continuity of care in a university family medicine program. Office hour contacts: levels of continuity* between nuclear families and physicians, third year residents

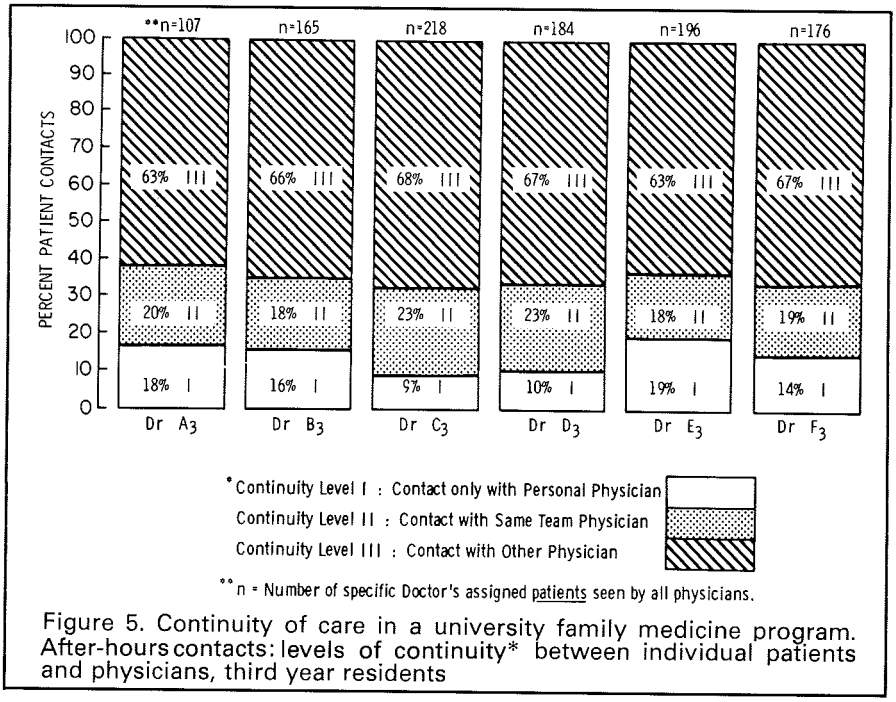

Figure 5. Continuity of care in a university family medicine program. After-hours contacts: levels of continuity* between individual patients and physicians, third year residents

Table 1. Inpatient Continuity

Personal Physician Activity	Third Year Patients	Second Year Patients	First Year Patients	Faculty Patients	Patients
Admitted and discharged	68	15	0	6	89
Admitted only	4	2	1	0	7
Discharged only	10	6	0	3	19
No contact	7	7	2	25	41
Total Number of Patients	89	30	3	34	
Physician unidentified					12

not so significant in the present study since 75 percent of the illness episodes required only one visit.

Little is known about continuity in private practice, but it is presumed to be high. In England, with relatively static populations compared to the United States, continuity of care given by family physicians occurs in 80 percent of all contacts, and in Canada the figure is 83 percent.[7,8] In a US private pediatric practice, the percentage of continuity was 84 percent, but this figure dropped to 64 percent after the practice became a university training program.[9]

It seems reasonable to expect a figure of 70 to 80 percent first level continuity for individual patients and 60 to 70 percent for families in the family practice residency training program. Similarly, one should expect continuity of care (characterized by some administrative and medical contact with the personal physician) in 65 percent of inpatients on the family practice service. Although these figures probably do not replicate exactly those of private practice, it is likely that they represent enough continuity of care to engender the necessary feeling of responsibility in young physicians in training.

In spite of the presumption of its long standing value, continuity of care has only recently been shown to have valid benefits in medical care, particularly in the areas of reducing health costs, improving patient and physician satisfaction, increasing efficient utilization of health care services, and reducing hospitalization rates.[10,11] Unfortunately the mobility of both patients and physicians in industrial society tends to detract from the principle of continuity of care, which therefore may be difficult for the family to attain over long periods of time.[12]

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